

REMARKS

Claims 37, 43, 44, 46-48 and 51-55 stand rejected, and claims 45 and 49 are objected to. Claim 37 is amended herein to recite that the binding interaction between the hydroxyethylstarch (HES) molecule and the protein is a single covalent bonding which is the result of a coupling reaction between (i) the terminal aldehyde group of the HES molecule and (ii) a primary amino group of the protein to form a Schiff's base. Withdrawn claim 58 is similarly amended, such that it recites a method for preparing a HES-protein conjugate in which the binding interaction between the HES molecule and the protein is a single covalent bonding which is the result of a coupling reaction between (i) the terminal aldehyde group of the HES molecule and (ii) a primary amino group of the protein to form a Schiff's base, characterized in that the coupling reaction is carried out in aqueous solution between the terminal aldehyde group of the HES molecule and a primary amino group of the protein. Claim 64 is amended for consistency with claims 37 and 58. Support for these amendments can be found at, for example, page 4, lines 16-24 of Applicants' translated specification as filed on September 2, 2004. Thus, no new matter has been added.

In light of these amendments and the following remarks, Applicants respectfully request reconsideration and allowance of claims 37, 43-49, and 51-55, as well as rejoinder and allowance of claims 58, 59, and 64-67.

Rejection under 35 U.S.C. § 102 or § 103

The Examiner rejected claims 37, 43, 44, 46-48, and 51-55 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,500,930 (the Adamson patent) or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over the Adamson patent. The Examiner alleged that the Adamson patent discloses a hemoglobin-HES conjugate. The Examiner also suggested amending claim 37 to recite "... a single covalent bond which results from a coupling of the terminal aldehyde"

To further prosecution, claim 37 has been amended as the Examiner suggested, such that it recites a HES-protein conjugate in which the binding interaction between the HES molecule

and the protein is a single covalent bonding. The Adamson patent does not teach or suggest such a conjugate. In the Adamson patent, an amine group of hemoglobin is reacted with aldehyde groups of an oxidized starch to form a Schiff's base (azomethine) linkage, which is reduced in a subsequent step to an amine bond. The oxidized starch (e.g., HES) is prepared by oxidation with periodate, which yields a starch modified with aldehyde groups formed by a ring opening reaction of one or more sugar moieties within the starch. *See, e.g.,* the Adamson patent at column 2, lines 39-51, column 5, lines 26-30, and column 7, lines 16-20. The starch of Adamson thus is unselectively coupled to hemoglobin.

In contrast to the disclosure of Adamson, the present claims recite that the binding interaction between the HES molecule and the protein is a single covalent bonding which is the result of a coupling reaction between the terminal aldehyde group of the HES molecule and a primary amino group of the protein to form a Schiff's base. At no point does the Adamson patent disclose a conjugate in which HES is selectively coupled to a protein via a single covalent bond at its terminal aldehyde. Thus, the present claims are novel and non-obvious over this reference.

In light of the above, Applicants respectfully request withdrawal of the rejection of claims 37, 43, 44, 46-48, and 51-55 under 35 U.S.C. § 102(e) or, in the alternative, under 35 U.S.C. § 103(a).

Claim Objections

The Examiner objected to claims 45 and 49 as being dependent upon a rejected base claim, but stated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have amended claim 37 as discussed above. In light of this amendment, Applicants respectfully submit that claims 45 and 49 are allowable, and request that the objection to these claims be withdrawn.

Request for Rejoinder

Applicants respectfully request rejoinder of claims 58, 59, and 64-67, which recite methods for making the conjugates recited in present claims 37 and 43-49. Claim 58 has been amended to incorporate the language of claim 37. Claim 64 also has been amended for consistency with claims 37 and 58. As amended, claims 58, 59, and 64-67 require all of the limitations of claim 37, which Applicants submit is in condition for allowance. Thus, rejoinder of these claims is respectfully requested.

Inventorship

Applicants respectfully request correction of the inventorship for the present application. The Assignee has determined that Klaus Sommermeyer, Wolfram Eichner, Sven Frie, Cornelius Jungheinich, Roland Scharpf, Katharina Lutterbeck should be added as inventors. Thus, the attached declaration lists the above-named individuals as inventors, in addition to Cornelius Jungheinich and Roland Scharpf. Also submitted herewith are an assignment from the added inventors to the real party in interest, Fresenius Kabi Deutschland GmbH, a statement from the Assignee consenting to the correction of inventorship, and a declaration by the added inventors that their omission from the previous list of inventors was without deceptive intent.

Information Disclosure Statements

Applicants note that Supplemental Information Disclosure Statement (SIDS) documents were filed on June 25, 2007, and September 26, 2007. Applicants respectfully request that the Examiner return to the undersigned agent initialed copies of the Forms PTO-1449 that accompanied these SIDS filings. Copies of the Forms PTO-1449 are attached hereto for the Examiner's convenience.

Applicant : Hemberger et al.
Serial No. : 10/506,367
Filed : April 5, 2005
Page : 11 of 11

Attorney's Docket No.: 14503-011US1

CONCLUSION

Applicants submit that claims 37, 43-49, and 51-55 are in condition for allowance, which action is respectfully requested. Applicants further request rejoinder and allowance of claims 58, 59, and 64-67. The Examiner is invited to telephone the undersigned agent if such would further prosecution.

Please charge \$490 for the Petition for Extension of Time fee, and apply any other charges or credits, to deposit account 06-1050.

Respectfully submitted,

Date: November 6, 2008/

/Elizabeth N. Kaytor/

Elizabeth N. Kaytor, Ph.D.

Reg. No. 53,103

Fish & Richardson P.C.
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (877) 769-7945